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# SOIL CONSERVATION SERVICE NEWS

REGION 4

Comprising States of Louisiana, Arkansas,  
Oklahoma and Texas, except High Plains Area



REGIONAL OFFICE--FORT WORTH, TEXAS

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## SURVEY SHOWS THAT COOPERATORS WILL CONTINUE CONSERVATION PROGRAMS AFTER EXPIRATION OF AGREEMENT PERIOD

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Ninety-four percent of 1,536 cooperators in Region 4, who replied to a recent questionnaire, declared they will continue to use a complete soil and water conservation program on their land after their cooperative agreements with the Soil Conservation Service have expired.

The adoption of a coordinated soil and water conservation system had increased the value of their farms, 1,429 (93 percent) reported. A total of 1,077 farmers, or 70 percent of the total replying, said that their gross farm incomes had been increased by the measures which they had put into effect on their farms.

In commenting on the survey findings, Louis P. Merrill, regional conservator, said: "It is significant that farmers in all sections of the Region have found conservation measures worth continuing on their land. Some of these owners control large tracts of land, while others operate no more than 40 acres. The statements many of these men attached to their questionnaire replies indicate that they have a new conception of the land and its use. These landowners clearly show they know that preservation of our soil resources is necessary not only for a sustained agriculture but also for a virile nation."

The questions submitted to cooperators included: (1) Do you feel that the adoption of a soil and water conservation program on your farm has increased the value of the farm? (2) Do you feel that the adoption of a soil and water conservation program on your farm has increased the farm income? and (3) Will you continue to carry out a complete soil and water conservation program after your cooperative agreement expires?

The results of the survey, by states:

<u>State</u>	QUESTION I		QUESTION II		QUESTION III	
	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
Texas	622	15	493	45	625	13
Arkansas	168	5	128	15	168	5
Louisiana	215	2	173	9	212	5
Oklahoma	424	2	283	26	444	2
TOTAL	1,429	24	1,077	95	1,449	25

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#### METHOD OF ESTABLISHING DALLIS GRASS DESCRIBED

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By W. M. Nixon  
Associate Agronomist

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A practical and economical method of establishing Dallis grass (*Paspalum dilatatum*) on pasture land is recommended by K. G. Baker, superintendent of the Blackbelt Experiment Station in Alabama.

The method is to mow old stands of Dallis grass after the seed has matured, and then to spread the hay lightly over the area where a stand of the grass is desired. The straw serves as a protective mulch for the young plants until they become established.

It is reported that by using this method good stands are being obtained, with a minimum expenditure of time and labor. Dallis grass thrives along rights-of-way throughout Louisiana, East Texas and Southern Arkansas. Farmers should be encouraged to take advantage of this opportunity to establish a highly desirable grass in their pasture. Difficulty has been experienced in obtaining satisfactory stands of Dallis grass from seed, and it is believed that this information should be given to the farmer so he may take advantage of the opportunity to obtain a stand of this valuable forage plant without any expenditure. The hay should be spread only on ground which has been prepared by disking or harrowing. Do not recommend sowing on a dense cover of Bermuda or carpet grass with the expectation of getting a stand.

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## CONSERVATION HIGHLIGHTS FROM REGION 4, 1938-39

(From the Annual Report as of July 1, 1939)

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With the passage of a Soil Conservation Districts Law by the Texas Legislature April 24, every state in Region 4 now has legislation authorizing the creation of soil conservation districts. It is anticipated that a number of districts will be formed in Texas at an early date.

The transfer of the Land Utilization program from the Bureau of Agricultural Economics to the Soil Conservation Service encouraged a different viewpoint on the part of all technicians with regard to the meaning of the term "land conservation." Conferences were held by personnel of the Soil Conservation Service and the Land Utilization staff to integrate the two programs and to permit comprehension of the new-broadened action program of the Service.

Plans have been formulated in cooperation with the Extension Service, upon which will be based the development of unified county program planning in Soil Conservation Districts.

The water facilities program in the region, less than a year old, has grown to include within the project boundaries some 14,062 square miles, the operations upon which are supervised from 12 projects. This program on the basis of the interest shown by farmers in the low rainfall area of the region undoubtedly could have been expanded to far greater extent. It was felt, however, that the best course would not be one of haste but one rather of detailed step-by-step accomplishment. The results from field operations in so short a period of time naturally do not show to any great extent, with the exception of farm ponds and wells which have been installed and are functioning. Cropland measures put into practice on the farms of water facilities cooperators to date are only in the first stages of development but many farmers have already indicated their appreciation of the future use of these practices.

Evaluation studies of soil and water conservation methods and practices, started in 1938, indicate trends showing that definite findings will result. Recommendations evolving in the future from these studies will have actual field observations as a basis.

Paralleling the evaluation surveys of field practices is the economic survey. Of particular interest is the data comprising the sixth annual survey made on sample cooperating and non-cooperating farms in the Lindale, Texas, project area. In 1938, cooperators' incomes were 19 times greater than the average farm incomes received by the non-cooperators. Labor earnings of cooperators were seven times as great as non-cooperators.



Most interesting is the fact that although the average farm of both non-cooperator and cooperator had practically the same acreage, the non-cooperator had an average of approximately twenty acres more in cropland but could utilize only two-thirds of it. The cooperators, on the other hand, were utilizing four-fifths of their cropland at all times during the season. This year economic surveys were started on all land utilization projects within the region except those which were transferred to other agencies.

An outstanding development of the year has been the outgrowth of a partly experimental program carried out last year. In 1938, the North Texas State Teachers College sponsored a six-weeks course in conservation and natural resources. Two weeks were devoted to subjects of soil and water conservation. As a result of the popularity of the course at Denton, ten such courses were offered this year by ten major institutions in the region. The organization of the courses was handled by the schools. It is felt that these courses (in most instances attended by teachers or student teachers) will have a far reaching future effect in the development of general principles of conservation.

Two watershed surveys were authorized, and detailed investigations and studies of run-off and water flow retardations were begun on the Trinity and Concho Rivers in Texas this year. Headquarters for the Concho survey party are situated at San Angelo, Texas. For the Trinity River survey, headquarters are in Fort Worth, Texas. The North Concho survey report was completed February 28, 1939, and field work was immediately started on the South and Middle Concho Rivers. The Trinity River field work was completed July 1, 1939.

The development of a photographic laboratory this year for the production of planning and cooperative agreement maps upon aerial photographs has aided materially in simplifying the preparation of cooperative agreements and survey maps in Soil Conservation Districts.

Farmers have indicated widespread approval of the channel type terrace which was introduced in this region more than a year ago. They have found this type of terrace more economical to construct and easier to maintain. Farming operations are much more easily carried on with the channel type terrace.

During the year, interest in the proper location and construction of farm roads has been evidenced by farmers cooperating in the program, and steps have been taken to relocate farm roads on the contour and to protect road ditch vegetation. There also has been a marked increase in development of highway and roadside erosion control demonstrations. Nearly every camp and project in the region has completed or has under way at least

one highway erosion control project. Highway protective work is an important part of the Soil Conservation District program. Not only has excellent cooperation been secured from various state and county road departments and from the adjoining land owners, but also a great spread of these practices is seen outside the work areas.

Outstanding this year has been the reduction in number of wood fires in demonstration and camp areas of the Service. Especially is this reduction noticeable since it stands not for controlled fires but for actual lack of deliberate burning. The same result has been true in wildlife plantings. There has been a marked decrease also in the grazing of woods and wildlife areas. This trend has been essential in the successful development of 451 different wildlife plots which were planted to herbaceous vegetation during the fiscal year.

Hubam clover has been more widely planted this year in the Blacklands and West Cross Timbers sections where perennial legumes cannot generally be produced because of cotton root rot. The successful sodding of pastures through cultivation of the planted sod has been indicated this year with far better degree than ever before. Establishment of buffalo grass by means of seed became increasingly important in the western areas. The collection of 17,530 pounds of buffalo grass seed this year at a cost of .089 per pound is outstanding.

During the year, CCC enrollee training has made its greatest progress. Training has been directed not only toward the individual enrollee, but also toward the positions in the program which enrollees might reach through adequate training. The personnel training program of the region has included at least one planned training activity period for every member of the personnel. Thirty people have complete post entry educational courses on outside time during the fiscal year.

In connection with the training courses, the recognition of regional libraries as units of the Service Library in Washington has enabled the regional office to collect and circulate books, bulletins, and other information for the use of personnel in the Service. Other services rendered by the library have been to technical staffs in the development of their plans and programs and to private individuals through the medium of bulletins.

## DR. BENNETT PRAISES DISTRICT PROGRAM

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### Chief Spoke in Arkansas and Louisiana

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"The state soil conservation district is the best vehicle for democratic action on the land since the signing of the constitution," Dr. Hugh Hammond Bennett, Chief of the Soil Conservation Service declared during his visit to Louisiana and Arkansas last month.

"Upon the state soil conservation acts depends to a great extent the welfare of the United States," the Chief said when he addressed a group of supervisors of soil conservation districts at Minden, July 22. "It is the only means by which we can do the big job before us - I see no other way to save our land except through the soil conservation districts. If we fail, the United States fails."

The farmer's attitude was expressed at this meeting by E. T. Powell of Marion, La., a supervisor of the D'Arbonne Soil Conservation District, when he said:

"An impoverished people cannot be happy and they cannot uphold a community and a democracy. To me, soil conservation means flood control, bank deposits, happier people, and a confidence in the land. When we put confidence back into our farmers, we'll all have a better country to live in."

Dr. Bennett addressed audiences at Louisiana Polytechnic Institute at Ruston and at Southwestern Louisiana Institute at Lafayette while in the Pelican state.

In those addresses he declared that soil erosion is the United States' most serious problem -- a problem more important than all the nation's other problems combined.

Referring to the cotton situation in the South, Dr. Bennett said he believed that diversification - the finding of new cash crops - and the conservation of natural resources will comprise the solution of that problem.

"It's my conviction that we are coming into a new era in the South," Dr. Bennett said. "I'm afraid that more and more people are going to have to live on the land. We've got to make up our minds to control erosion and to conserve our natural resources regardless of the cost. We can't put a price on our land because it's the one thing without which we cannot exist."



More than 5,000 farmers, business men, agricultural leaders and members of their families heard Dr. Bennett speak at a field day meeting at Hope, Ark., July 25. The Chief stressed again the importance of the districts program in solving the Nation's erosion problems.

At Forrest City, Ark., where Dr. Bennett was the guest of the annual Crowley Ridge Peach Festival, he appeared at an agricultural rally in the High School auditorium, at the official barbecue, and Thursday evening, July 27, he crowned the festival queen.

Hoarseness, occasioned by the heavy speaking schedule, prevented the Chief's delivering the address he had prepared for the agricultural rally at Forrest City. J. W. Sargent, associate regional conservator, of Fort Worth, spoke in his stead.

Louis P. Merrill, conservator of Region 4, accompanied Dr. Bennett to Louisiana and to Hope. At Hope, Mr. Sargent joined the Chief's party.

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#### TWO ARKANSAS DISTRICTS ENTER INTO MEMORANDA OF UNDERSTANDING

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The Central Crowley Ridge and the Fourche LaFave-Petit Jean Soil Conservation Districts in Arkansas this month were added to the list of operating districts in that state when supervisors entered into memoranda of understanding with the Department of Agriculture.

The Central Crowley Ridge Soil Conservation District covers 166,000 acres in parts of Craighead and Poinsett Counties. Headquarters will be established at Jonesboro.

The Fourche LaFave-Petit Jean district comprises approximately 630,280 acres lying in Yell County and part of Perry County. Headquarters for this district will be at Danville, Arkansas.

A total of 269,798 acres had been placed under agreement with Arkansas soil conservation districts on the first of this month, Glenn E. Riddell, state coordinator for the Soil Conservation Service reported. This area is covered in 2,044 agreements which landowners and their respective district boards of supervisors have signed.

As of August 1, 114 additional farm plans had been completed and presented to the farmers for their signatures. These plans represent 14,075 acres. Mr. Riddell reported that 160 farm plans were being prepared for a total of 28,976 acres. A total of 4,412 applications for agreements have

been received by the districts.

Conservation surveys had been completed on 1,901,147 acres in Arkansas districts on August 1.

During July, 54 educational meetings were held in the districts, with 12,701 persons attending.

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## TWO NEW OKLAHOMA DISTRICTS GRANTED ASSISTANCE

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Supervisors of the Verdi-Grand and Checotah Soil Conservation Districts in Oklahoma and the U. S. Department of Agriculture this month entered into memoranda of understanding making it possible for personnel of the Soil Conservation Service to assist farmers in the districts to establish coordinated conservation systems on their land.

To date, 19 Oklahoma soil conservation districts have entered into memoranda of understanding with the Department.

The Verdi-Grand district comprises about 121,000 acres in Wagoner County. Headquarters for the district will be established at Wagoner, Okla. The Checotah district covers 193,920 acres in McIntosh County. Headquarters for this district will be at Checotah.

Fourteen Oklahoma soil conservation districts had entered into agreements with 739 landowners on Aug. 1, according to a report made by Leo S. Wortman, state coordinator for the Soil Conservation Service in Oklahoma. These agreements covered 128,510 acres.

The East Central District reported the greatest number of agreements, 132, which covered 17,132 acres. The Arkansas-Verdigris District had 130 agreements, with a total area aggregating 19,369 acres.

No agreements had been taken at that time in the three other Oklahoma districts which are beginning operations. In addition, 29 agreements, covering 5,574 acres, had been drawn and presented to farmers for signature. A total of 234 farm plans, aggregating 41,504 acres, was in progress.

Fifteen educational meetings, attended by 204 persons, were conducted in the Oklahoma districts last month. In addition, 11 meetings were held with a total of 72 farmers in planning and program execution. The report showed that 2,712 landowners had applied to their respective districts for assistance in establishing complete soil and water conservation and land use programs. Conservation surveys had been completed on 1,195,914 acres in the districts.

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SOIL LOSS AND RUN-OFF INCREASED AS A RESULT OF  
BURNING OF LITTER, GUTHRIE EXPERIMENTS SHOW

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The destruction of forest litter by fire each year increased rainfall run-off 31 times and increased soil loss  $11\frac{1}{2}$  times, according to records of run-off and soil loss at the Soil Conservation Experiment Station at Guthrie, Oklahoma., during an eight-hour period, 1931 to 1938, inclusive.

These findings were reported by Harry M. Elwell, assistant soil conservationist, and Harley A. Daniel, project supervisor, at the Experiment Station. The station is a cooperative project between the Oklahoma Agricultural Experiment Station and the Soil Conservation Service.

Records were kept on five plots for the eight-year period and on a sixth plot for a five-year period ending in 1938. Each area was  $1/100$  of an acre, located on soil typical of the Red Plains Region and on land slope ranging from 5.17 to 7.70 percent.

On a bare, hard fallow condition where no vegetation was permitted to grow, 202 times more run-off and 1,866 times more soil loss was recorded than for the undisturbed wooded area.

The percent of run-off from a rain storm of 3.97 inches on September 9 and 10, 1934, was 2.09 on the undisturbed woods; 26.11 on the burned over woods; 71.31 on the bare hard fallow land; 3.62 on Bermuda grass sod clipped to simulate grazing conditions; 0.96 for the Bermuda and native grass cover; and, 64.23 percent run-off for the continuous cotton, Messrs. Elwell and Daniel reported.

The maximum percentage of run-off recorded for a single rain from each of the following areas was: Virgin woods, unburned, 2.09; burned over woods, 51.11; bare hard fallow, 86.25; Bermuda grass clipped, 32.79; Bermuda and native grass, 0.96; and continuous cotton, 69.40 percent.

"These data indicate the tremendous increase in percent of run-off that may be expected by destruction of plant cover," Messrs Elwell and Daniel continued. "By wanton burning or destroying of vegetative cover, many other soil conditions may be affected, such as thinning of the stand of plants, destroying seed crops, worms and burrowing rodents which aid in the water absorption by the soil. Also, on areas formerly cultivated that have been abandoned, if fire is permitted to burn over such areas each year, there will be considerable destruction of various forms of algae and moss growth, which cause a crusting of the surface soil and prevent erosion."

The following table presents the average results from the small areas for the period of record:

TYPE OF COVER	PERCENT LAND SLOPE	PERCENT RUN-OFF	TONS SOIL LOSS PER ACRE	SIZE OF PLOTS
Bare Hard Fallow	7.70	28.28	20.529	1/100 acre
Continuous Cotton	6.06	11.20	10.241	1/100 "
Bermuda, Clipped	7.70	0.74	0.018	1/100 "
Woods, Burned	5.17	4.37	0.128	1/100 "
Virgin Woods	5.17	0.14	0.011	1/100 "
Bermuda and Na- tive grass - undis- turbed.*	5.17	0.03	0.001	1/100 "

\* 5-year average, 1934-38, inclusive.

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#### WORK ACCOMPLISHMENTS IN REGION 4 LISTED

##### FOR PAST FISCAL YEAR

The establishment of soil and water conservation practices was completed on 355,294 acres in 2,436 farms during the fiscal year ending June 30, 1939, according to a compilation in the annual report of Region 4.

During the year, 2,317 additional cooperative agreements were accepted by Soil Conservation Service projects and CCC camps. These agreements covered 416,599 acres.

The report for the fiscal year listed completed acres according to land use as follows: Cropland, 139,146; pasture, 111, 240; meadow land, 3,359; and woodland and wildlife, 26,536.

A total of 4,521 miles of terraces, protecting 80,830 acres, were constructed. In addition, 1,799,298 linear feet of terrace outlets were constructed. Sodding activities protected 3,507,360 square yards of terrace outlets. Strip crops were established on 58,276 acres.

In connection with pasture treatment, 7,767 miles of pasture furrows were constructed to protect 20,840 acres. A pasture area of 47,762 acres was seeded and sodded.



A total of 1,799 acres of meadow land were seeded and sodded, according to the report.

The accomplishments in woodland and wildlife work included: Field plantings of 5,437,870 trees and 555,897 shrubs on 5,840 acres; gully plantings of 83,907 trees and 21,775 shrubs on 97 acres; 1,625 acres of wildlife plantings; windbreak plantings of 11,075 trees and 5,200 shrubs on 15 acres.

A total of 757,129 rods of fences were constructed and 437,871 rods of fences were removed during the fiscal year in re-arrangement of fields to aid in erosion control and better farm management.

In order to provide an adequate supply of water for farm and ranch use, 306 stock ponds, with a total storage capacity of 1,768 acre-feet, were constructed.

Erosion hazards were eliminated by the construction of 294 miles of farm roads and the construction or repair of 101 bridges on farm roads.

A total of 1,232,142 linear feet of diversion terraces were constructed to protect farmlands from erosion or from the concentration of water on lowlands.

During the fiscal year, gully control was established on 87,648 acres. This work included the sloping of 2,777,827 square yards of banks; the seeding and sodding of 3,219,011 square yards; the construction of 2,527 earth dams, and of 742 other dams; the mulching of 129,430 square yards; the use of 65,738 square yards of sod flumes; and the use of 151,787 plants.

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#### DISTRICT PROGRESS IN LOUISIANA LISTED

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As of August 1, 331 farmers owning or operating 65,645 acres of land in the six operating state soil conservation districts in Louisiana had entered into cooperative agreements with their respective boards of supervisors, and were in the process of establishing complete and coordinated soil conservation systems on their land.

It also was reported that 1,303 farmers in the six districts who own or operate 323,788 acres had applied to their respective boards of supervisors, requesting assistance in the establishment of conservation practices.

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U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
OFFICE OF THE REGIONAL CONSERVATOR  
REGION 4

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OFFICIAL BUSINESS

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